

TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371ATTORNEY'S DOCKET NUMBER
33980R003U.S. APPLICATION NO. (if known,
see 37 CFR 1.5)

10/070988

INTERNATIONAL APPLICATION NO.
PCT/SE00/01751INTERNATIONAL FILING DATE
September 11, 2000PRIORITY DATE CLAIMED
September 15, 1999TITLE OF INVENTION
APPLICANT(S) FOR DO/EO/USFEEDING ARRANGEMENT FOR INDIVIDUAL FEEDING OF TIMBER PIECES
Cenneth Gunnarsson.

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(l).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ has been transmitted by the International Bureau (see accompanying PCT Form 308).
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☒ Amendments to the claims of the International Application under PCT Article 34 (35 U.S.C. 371).
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ have been transmitted by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☒ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 34 (35 U.S.C. 371).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern other document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☒ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A FIRST preliminary amendment.
☐ A SECOND or SUBSEQUENT preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information:
 - a. PCT Publication WO 01/19538 with International Search Report (PCT/ISA/210)
 - b. PCT Notification of Receipt of Record Copy (Form PCT/IB/301)
 - c. Notification Concerning Submission or Transmittal of Priority Document (Form PCT/IB/304)
 - d. International Preliminary Examination Report (Form PCT/IPEA/409)
 - e. Verified Statement Claiming Small Entity Status

ATTORNEY'S DOCKET NUMBER
33980R003TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371U.S. APPLICATION NO. (if known, see
37 CFR 1.5)

10/070988

17. ☒ The following fees are submitted:

CALCULATIONS

PTO USE ONLY

Basic National Fee (37 CFR 1.492(a)(1)-(5)):

Search Report has been prepared by the EPO or JPO \$890.00

International preliminary examination fee paid to USPTO
(37 CFR 1.482) \$710.00No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee
paid to USPTO (37 CFR 1.445(a)(2)) \$740.00Neither international preliminary examination fee (37 CFR 1.482) nor
international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$ 1,040.00International preliminary examination fee paid to USPTO (37 CFR 1.482)
and all claims satisfied provisions of PCT Article 33(2)-(4) \$100.00**ENTER APPROPRIATE BASIC FEE AMOUNT =**

\$1040.00

Surcharge of \$130.00 for furnishing the oath or declaration later than ☐ 20 ☐ 30 months from the earliest claimed
priority date (37 CFR 1.495(e)).

\$ ---

Claims

Number Filed

Number Extra

Rate

Total Claims 11 - 20 = 0 x \$18.00

Independent Claims 1 - 3 = 0 x \$84.00

Multiple dependent claim(s) (if applicable) + \$280.00 .00

TOTAL OF ABOVE CALCULATIONS =

\$ 1040.00

Reduction by 1/2 for filing by small entity, if applicable. Verified Small Entity statement must also be filed. (Note
37 CFR 1.9, 1.27, 1.28).

\$520.00

SUBTOTAL =

\$ 520.00

Processing fee of \$130.00 for furnishing the English translation later than ☐ 20 ☐ 30 months from the earliest
claimed priority date (37 CFR 1.492(f)).

+

TOTAL NATIONAL FEE =

.520.00

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an
appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property.

+

\$40.00

TOTAL FEES ENCLOSED =

\$560.00



00441

PATENT TRADEMARK OFFICE

Amount to be
refunded \$

charged \$

a. ☒ A check in the amount of \$560.00 to cover the above fees is enclosed.b. ☐ Please charge my Deposit Account No. _____ in the amount of \$_____ to cover the above fees.c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 02-4300.**NOTE:** Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and
granted to restore the application to pending status.**SEND ALL CORRESPONDENCE TO:**

SMITH, GAMBRELL & RUSSELL, LLP

1850 M Street, N.W., Suite 800

Washington, D.C. 20036

Telephone: (202) 659-2811

Facsimile: (202) 263-4329

SIGNATURE

Dennis C. Rodgers, Reg. No. 32,936

NAME

REGISTRATION NO.

Date: March 14, 2002

33980R003

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Cenneth Gunnarsson

International Application No.: PCT/SE00/01751

International Filing Date: September 11, 2000

U.S. Serial No.: To Be Assigned

Group Art Unit: To Be Assigned

Filed: : Herewith

Examiner: To Be Assigned

For: FEEDING ARRANGEMENT FOR INDIVIDUAL FEEDING OF TIMBER

PIECES

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to or concurrent with calculation of the filing fees, please amend this application as follows.

IN THE CLAIMS

Applicant has attached to this Amendment documents entitled "Amended Claims" and "Marked-Up Copy of Previous Claims". Please amend claims 3, 5 and 6 as shown in the document entitled "Marked-Up Copy of Claims". Please add new claims 7-11 as shown in the document entitled "Amended Claims".

REMARKS

Entry and consideration of this Preliminary Amendment is respectfully requested prior to or concurrent with calculation of the filing fees. This Preliminary Amendment is being filed to remove the multiple dependent claims to avoid the surcharge.

Examination on the merits is awaited.

Respectfully submitted,

SMITH, GAMBRELL & RUSSELL, LLP

By: 

Dennis C. Rodgers, Reg. No. 32,936
1850 M Street, N.W., Suite 800
Washington, D.C. 20036
Telephone: (202) 659-2811
Fax: (202) 263-4329

March 14, 2002

2002 MAR 14 PM 3:00
1850 M STREET, N.W., SUITE 800
WASHINGTON, D.C. 20036
TELEPHONE: (202) 659-2811
FAX: (202) 263-4329

MARKED UP COPY OF CLAIMS

3. (Amended) The feeder arrangement as claimed in Claim 1 [or 2], characterised by a synchronisation conveyor (13) which extends from the discharge end of the incoming conveyor (7) and through the guide space (21), said synchronisation conveyor having arrest members (14) against which rest the front edges of the timber pieces (10) in the direction of movement.

5. (Amended) The feeder arrangement as claimed in [any of Claims 1 to 4] Claim 1, characterised in that the carriers (23) have a longitudinal direction which approximately forms a tangent with the curving path of the guide space (21) when the carrier departs from the guide space.

6. (Amended) The feeder arrangement as claimed in Claim 4 [or 5], characterised in that said drive means (18) includes a circulating belt on which rest the timber pieces (10).

AMENDED CLAIMS

3. (Amended) The feeder arrangement as claimed in Claim 1, characterised by a synchronisation conveyor (13) which extends from the discharge end of the incoming conveyor (7) and through the guide space (21), said synchronisation conveyor having arrest members (14) against which rest the front edges of the timber pieces (10) in the direction of movement.
5. (Amended) The feeder arrangement as claimed in Claim 1, characterised in that the carriers (23) have a longitudinal direction which approximately forms a tangent with the curving path of the guide space (21) when the carrier departs from the guide space.
6. (Amended) The feeder arrangement as claimed in Claim 4, characterised in that said drive means (18) includes a circulating belt on which rest the timber pieces (10).
7. (New) The feeder arrangement as claimed in Claim 2, characterised by a synchronisation conveyor (13) which extends from the discharge end of the incoming conveyor (7) and through the guide space (21), said synchronisation conveyor having arrest members (14) against which rest the front edges of the timber pieces (10) in the direction of movement.
8. (New) The feeder arrangement as claimed in Claim 2, characterised in that the carriers (23) have a longitudinal direction which approximately forms a tangent with the curving path of the guide space (21) when the carrier departs from the guide space.
9. (New) The feeder arrangement as claimed in Claim 3, characterised in that the carriers (23) have a longitudinal direction which approximately forms a tangent with the curving path of the guide space (21) when the carrier departs from the guide space.
10. (New) The feeder arrangement as claimed in Claim 4, characterised in that the carriers (23) have a longitudinal direction which approximately forms a tangent with the curving path of the guide space (21) when the carrier departs from the guide space.
11. (New) The feeder arrangement as claimed in Claim 5, characterised in that said drive means (18) includes a circulating belt on which rest the timber pieces (10).

FEEDING ARRANGEMENT FOR INDIVIDUAL FEEDING OF TIMBER PIECES

TECHNICAL FIELD

5

The present invention relates to a feeding arrangement for the individual feeding of timber pieces to a downwardly moving conveyor, and comprising an incoming conveyor for the supply of timber pieces and projecting carriers on the downwardly moving conveyor.

10

BACKGROUND ART

15

The present invention is intended to be applied in a plant for the sorting of individual timber pieces of different dimensions and/or qualities into a number of sorting compartments superposed over one another.

20

In prior art plants of the above-mentioned type, the individual sorting compartments are represented by approximately horizontal conveyors of a considerable length, of the order of magnitude of 50-100 m or possibly more. These conveyors are superposed over one another with a spacing of approximately 30-40 cm. The number of sorting compartments in the vertical direction may be large, often as many as 30-50 in number.

25

A downwardly moving conveyor runs along the infeed ends of the sorting compartments and conveys the individual timber pieces up to a given, predetermined sorting compartment where the timber piece is discharged by means of a transfer device and is fed into the selected sorting compartment.

30

Prior art plants have suffered from excessively low capacity, since the transfer of the individual timber pieces from the downwardly moving conveyor to each respective sorting compartment takes excessively long time.

In order to attempt to increase the capacity of the plant, the time available for infeed of each individual timber piece into a specific sorting compartment has been

increased. This has been realised by means of an increase of the linear transport length for each timber piece on the downwardly moving conveyor from the uppermost sorting compartment to the lowermost. In order to achieve this, the downwardly moving conveyor has been placed at an inclination in that the individual
5 sorting compartments do not begin in a vertical plane, but in a plane which inclines to the vertical. This has been achieved in that an upper sorting compartment extends out beyond a subjacent sorting compartment. The downwardly moving conveyor follows the infeed ends of the sorting compartments and displays considerable inclination in relation to a vertical plane.

10

The downwardly moving conveyor has a number of chains on which the timber pieces lie flat with the longitudinal direction of the timber pieces approximately at right angles to the direction of movement of the chains. This implies that the timber pieces incline in the same manner as the chains, for which reason the front edges of
15 the timber pieces, seen in the direction of movement, are constantly located on a lower level than their rear edges. This inclination of the timber pieces is highly advantageous, or even necessary, when the timber pieces are to be transferred from the downwardly moving conveyor to each respective sorting compartment.

20 For feeding the individual timber pieces to the downwardly moving, inclining conveyor, use has been made of a conveyor which moves approximately horizontally and in the same direction as the downwardly moving conveyor. The transfer between these two conveyors was put into effect in a quite simple manner.

25 The above-described arrangement with sorting compartments, where an upper sorting compartment extends with an end portion out beyond the end of a subjacent sorting compartment implies that the length of the lowermost and shortest sorting compartment is determined by the requirements on the capacity of the plant and that, as a result, all superjacent sorting compartments will, in principle, be unnecessarily
30 long and costly and in which the uppermost sorting compartments will be far too long.

As an attempt to obviate the need for these excessively long sorting compartments, the objective is to place the infeed ends of the sorting compartments and the

downwardly moving conveyor in mutually parallel vertical planes. This requires that the downwardly moving conveyor be provided with projecting carriers which each are to carry a single timber piece. The previously known technique of feeding the downwardly moving conveyor cannot be employed in such a configuration.

5

PROBLEM STRUCTURE

The present invention has for its object to design the feeding arrangement intimated by way of introduction such that it can, with high capacity, feed a substantially vertical downwardly moving conveyor with projecting carriers, at the same time as the timber pieces carried by the carriers can be given an orientation which is favourable when the timber pieces are subsequently transferred to each respective sorting compartment. In particular, the present invention has for its object to design the arrangement according to the present invention such that it affords an extremely high work rate and a high level of operational reliability.

10
15

SOLUTION

The objects forming the basis of the present invention will be attained if the carriers incline obliquely downwards in a direction out from the downwardly moving conveyor, that a curved guide space defined by guide rails is disposed to overlap an upper region of the downwardly moving conveyor with a lower end portion, and that the angle of curvature of the guide space is so great that the upper side of a timber piece coming to the guide space will be turned downwards when the timber piece rests on a carrier.

20
25

BRIEF DESCRIPTION OF THE ACCOMPANYING DRAWINGS

The present invention will now be described in greater detail hereinbelow, with particular reference to the accompanying Drawings. In the accompanying Drawings:

30

Fig. 1 is a vertical side elevation of the infeed ends of an arrangement with mutually superposed sorting compartments, where the feeder

arrangement according to the present invention is located over the uppermost sorting compartment; and

Fig. 2 is a vertical side elevation of the arrangement according to the present invention in connection with the infeed ends of the uppermost sorting compartments.

DESCRIPTION OF PREFERRED EMBODIMENT

Fig. 1 shows a vertical side elevation of one end of a plant for sorting timber, so that the timber, after sorting, will be arranged according to timber dimensions and quality. The plant is based on a bearing structure of steel beams and, in the illustrated embodiment, has a height of approximately 20 m. The plant includes a number of sorting compartments, one for each timber dimension and quality, or possibly one for each range of dimensions or qualities. The sorting compartments are arranged superposed over one another, with a spacing in the vertical direction of 30-40 cm. Each sorting compartment includes a number of conveyors disposed at the same height and parallel with each other and carrying the timber pieces which lie only in one layer on each sorting compartment and which have their longitudinal direction horizontal and at right angles to the longitudinal directions of the conveyors and the sorting compartments, i.e. at right angles to the plane of the Drawing in Fig. 1.

In Fig. 1, reference numeral 1 relates to the above-mentioned sorting compartments, while reference numeral 2 relates to a downwardly moving part in a vertically running conveyor, while reference numeral 3 relates to an upwardly moving part in the above-mentioned conveyor. In its entirety, the conveyor, which may suitably be substantially vertical, carries reference numeral 4 and runs over an upper bending roller 5 and a lower bending roller 6.

The vertical conveyor carries the timber pieces from above and downwards for infeed of them into a specific sorting compartment 1. For feeding the timber pieces to the vertical conveyor, the plant displays an incoming conveyor 7 which is substantially horizontal, and which carries the timber pieces horizontally, with the

longitudinal direction at right angles to the direction of movement of the conveyor 7 and hence at right angles to the plane of the paper in Fig. 1.

For transferring the timber pieces carried on the incoming conveyor 7, the arrangement according to the present invention has a feeder device carrying the generic reference numeral 8.

Fig. 2 shows, on a larger scale, the feeder device 8 together with an upper region of the vertical conveyor 4 and the four uppermost sorting compartments 1.

10

The incoming conveyor 7 has at least one end portion which is turned to face the feeder device 8 and which is substantially horizontal. The incoming conveyor 7 includes carrier rails 9 on which the timber pieces 10 slide. Further, the incoming conveyor 7 includes drive chains, belts or the like which are provided with carriers 11 which shunt the individual timber pieces 10 ahead of them. The incoming conveyor 7 feeds the timber pieces 10 in a direction to the left in the Drawing, in accordance with the arrow 12.

In the region between the discharge end of the incoming conveyor 7 and the upper end of the vertical conveyor 4, there is disposed a synchronisation conveyor 13 with arrest members 14 which prevent individual timber pieces from moving to the left and downwards at a speed which is greater than the speed of the synchronisation conveyor 13. The synchronisation conveyor runs synchronously with the vertical conveyor 4 in the sense that an arrest member 14 must always coincide in terms of movement with a carrier 23 on the vertical conveyor 4 (as will be described in greater detail below). It is clearly apparent from the Figure how the timber pieces 10 abuts against the arrest members 14 with their front edges seen in the direction of movement. It will further be apparent that an upper region of the downwardly moving part 2 in the vertical conveyor 4 overlaps with a lower portion of the synchronisation conveyor 13, and it is in this region that the movements of the arrest members 14 and the carriers 23 are to coincide.

The path of the synchronisation conveyor 13 is determined by the two bending rollers 15 and 16, as well as by a guide rail 17 which has a straight and

approximately horizontal portion facing towards the incoming conveyor 7 and an arched downward portion which is directed towards the vertical conveyor 4 and which overlaps partly with it. The arched portion is approximately in the form of an arc and of an extent in the circumferential direction of approximately 90° or slightly more.

For transferring the individual timber pieces 10 from those positions they assume when they depart from the incoming conveyor 7 to those positions they assume with their front edges abutting against the arrest members 14 on the synchronisation conveyor 13, the arrangement according to the present invention includes a drive means with a circulating belt 18, a chain or the like. The belt 18 runs over the two bending rollers 19 and 20 and is located with its upper part slightly above the upper surface of the guide rail 17 so that the timber pieces, by friction co-operation with the belt 18, are advanced by it. The belt 18 runs with greater linear speed than that which applies to the synchronisation conveyor 13 so that the timber piece 10' along the horizontal section of the guide rail 17 is accelerated to a position which corresponds to the timber piece 10'' where it subsequently follows the arrest member 14 at that speed which is defined by the synchronisation conveyor.

On the outside of the guide rail 17, there is a guide space 21 through which the timber pieces pass. The guide space 21 is defined outwardly and upwardly by an outer guide rail 22 which, at least to a part of its (approximately one quarter of a turn) length, runs approximately parallel with the curved section of the inner guide rail 17. It will be clearly apparent from the Figure how the individual carriers 23 disposed on the vertical conveyor 4 extend straight through the guide space 21.

The outer guide rail 22 has a lower end portion which may be seen as an upward extension of the vertical conveyor 4.

As was mentioned above, the inner guide rail 17 is of an extent which preferably somewhat exceeds 90°. This implies that if the upper, straight section of the guide rail 17 is horizontal, its lower end (the discharge end) will diverge somewhat away from the vertical conveyor 4 in a downward direction. Between the lower end region of the inner guide rail 17 and the vertical conveyor 4, the guide space 21 will, as a

result, have a downwardly cuneiformly flaring section which is downwardly defined by a carrier 23 passing therethrough. It is in this region that the deposition of a timber piece from an arrest member 14 to a carrier 23 is completed.

- 5 It will further be apparent from the Figure that the carriers 23 incline obliquely downwards in a direction out from the downwardly moving part 2 in the vertical conveyor 4. Hereby, the carriers 23 will approximately form tangents to the bending curve of the guide space 21 when the carrier departs from the guide space. The curvature of the guide space 21 is so great that the upper side of a timber piece which
10 is fed to the guide rail 17 will be turned to face downwards when the same timber piece rests on a carrier 23.

- It was mentioned above that the synchronisation conveyor 13 in a sense ran synchronously with the vertical conveyor 4. However, the synchronisation conveyor
15 13 moves at greater linear speed than the carriers 23. Further, the distances between adjacent arrest members 14 is greater than between adjacent carriers 23. The synchronisation resides in the fact that a timber piece whose position in the guide space 21 is defined by an arrest member 14 is to come into contact with a carrier 23 located in the guide space, at the same position in the guide space, namely
20 approximately where the width of the guide space begins to increase in a downward direction. Further, the arrest member 14 should have wholly passed the carrier 23 so that the timber piece rests entirely on the carrier when this departs from the guide space and the arrest member 14 begins to be angled away at the bending roller 16.

WHAT IS CLAIMED IS:

1. A feeding arrangement for the individual feeding of timber pieces (10) to a downwardly moving conveyor (2), comprising an incoming conveyor (7) for the supply of timber pieces and projecting carriers (23) on the downwardly moving conveyor, **characterised in that** the carriers (23) incline obliquely downwards in a direction out from the downwardly moving conveyor (2); that a curved guide space (21) defined by guide rails (17, 22) is disposed to overlap an upper region of the downwardly moving conveyor (2) with a lower end portion; and that the angle of curvature of the guide space is so great that the upper side of a timber piece (10) coming to the guide space will be turned downwards when the timber piece rests on a carrier.
2. The feeder arrangement as claimed in Claim 1, **characterised in that** the incoming conveyor (7) has an end portion facing towards the guide space (21) which is approximately horizontal; and that, the guide space has an angle of curvature downwards which is approximately 90° or greater.
3. The feeder arrangement as claimed in Claim 1 or 2, **characterised by** a synchronisation conveyor (13) which extends from the discharge end of the incoming conveyor (7) and through the guide space (21), said synchronisation conveyor having arrest members (14) against which rest the front edges of the timber pieces (10) in the direction of movement.
4. The feeder arrangement as claimed in Claim 3, **characterised in that** drive means (18) is disposed along at least a part of the path of the synchronisation conveyor (13), said drive means being operative to act on the timber pieces (10) at a speed which is greater than the speed of the synchronisation conveyor.
5. The feeder arrangement as claimed in any of Claims 1 to 4, **characterised in that** the carriers (23) have a longitudinal direction which approximately forms a tangent with the curving path of the guide space (21) when the carrier departs from the guide space.

6. The feeder arrangement as claimed in Claim 4 or 5, **characterised in that** said drive means (18) includes a circulating belt on which rest the timber pieces (10).

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
22 March 2001 (22.03.2001)

PCT

(10) International Publication Number
WO 01/19538 A1

(51) International Patent Classification⁷: **B07C 5/14**

(21) International Application Number: **PCT/SE00/01751**

(22) International Filing Date:
11 September 2000 (11.09.2000)

(25) Filing Language: **Swedish**

(26) Publication Language: **English**

(30) Priority Data:
9903274-0 15 September 1999 (15.09.1999) **SE**

(71) Applicant (for all designated States except US): **C. GUNNARSSONS VERKSTADS AB [SE/SE];** Olvågen, S-340 30 Vislanda (SE).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **GUNNARSSON, Cenneth [SE/SE];** Växjövägen, S-340 30 Vislanda (SE).

(74) Agents: **WALLENGREN, Yngvar et al.;** Patentbyrå Y Wallengren AB, Box 116, S-331 21 Värnamo (SE).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DE (utility model), DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

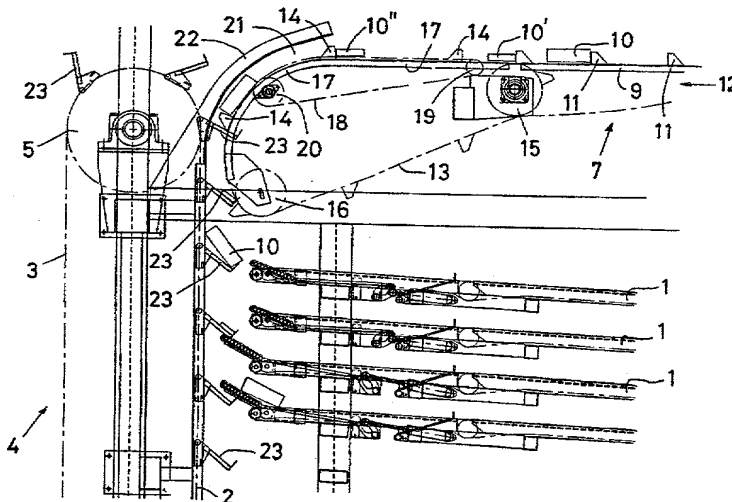
(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— With international search report.

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **FEEDING ARRANGEMENT FOR INDIVIDUAL FEEDING OF TIMBER PIECES**



(57) Abstract: A feeder arrangement for the individual feeding of timber pieces (10) to a downwardly moving conveyor (2) includes an incoming conveyor (7) and projecting carriers (23) on the downwardly moving conveyor (2). The incoming conveyor (7) is disposed for the feeding of timber pieces (10). The carriers (23) incline obliquely downwards and outwards from the downwardly moving conveyor (2). A curved guide space (21) is disposed to overlap, with a lower end portion, an upper portion of the downwardly moving conveyor (2). The angle of curvature of the guide space (21) is so great that the upper side of a timber piece (10) which comes to guide space (21) will be turned to face downwards when the timber piece (10) rests on a carrier (23). The incoming conveyor (7) has an end portion which is turned to face towards the guide space (21) and which is approximately horizontal.

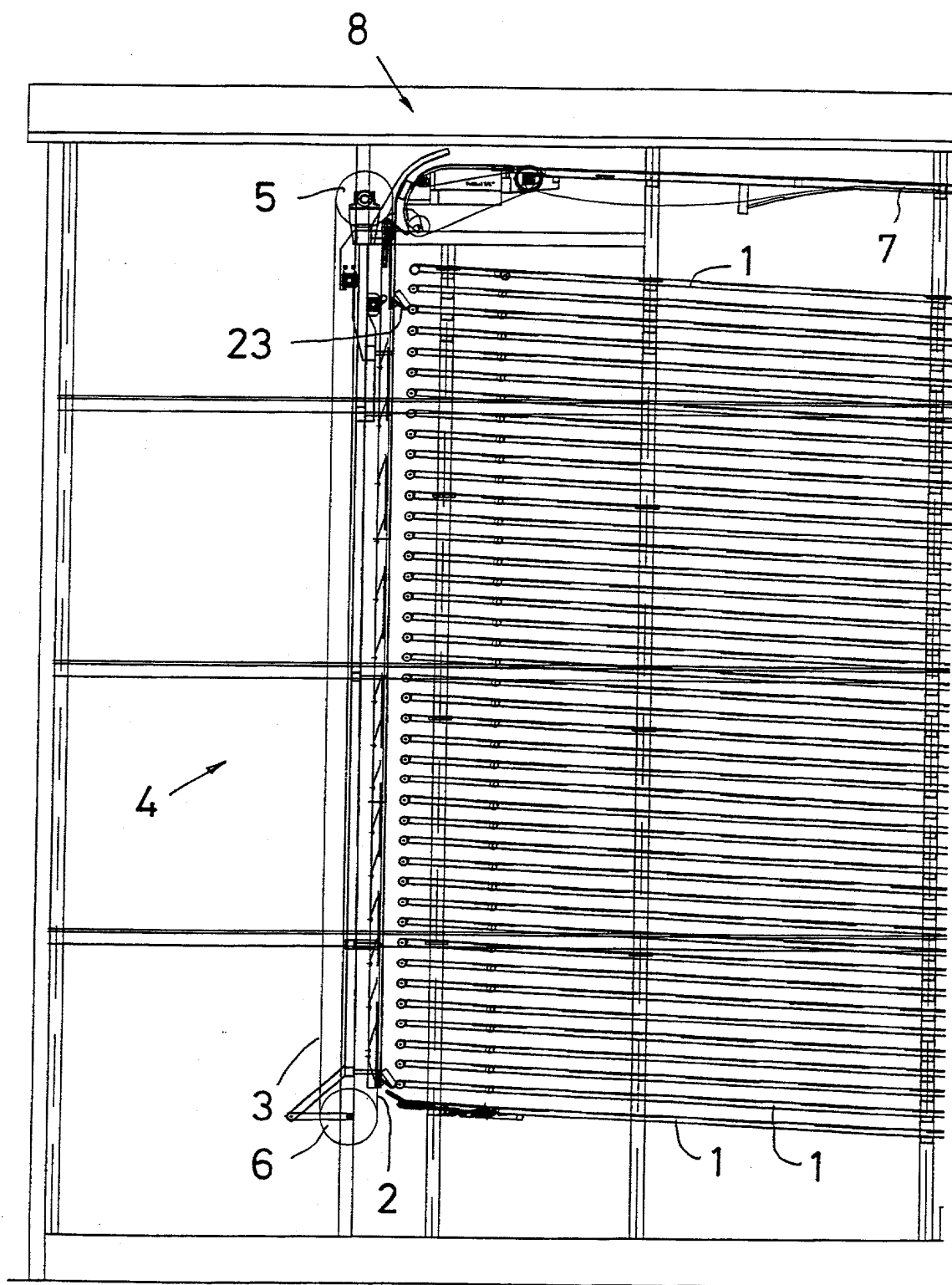


Fig 1

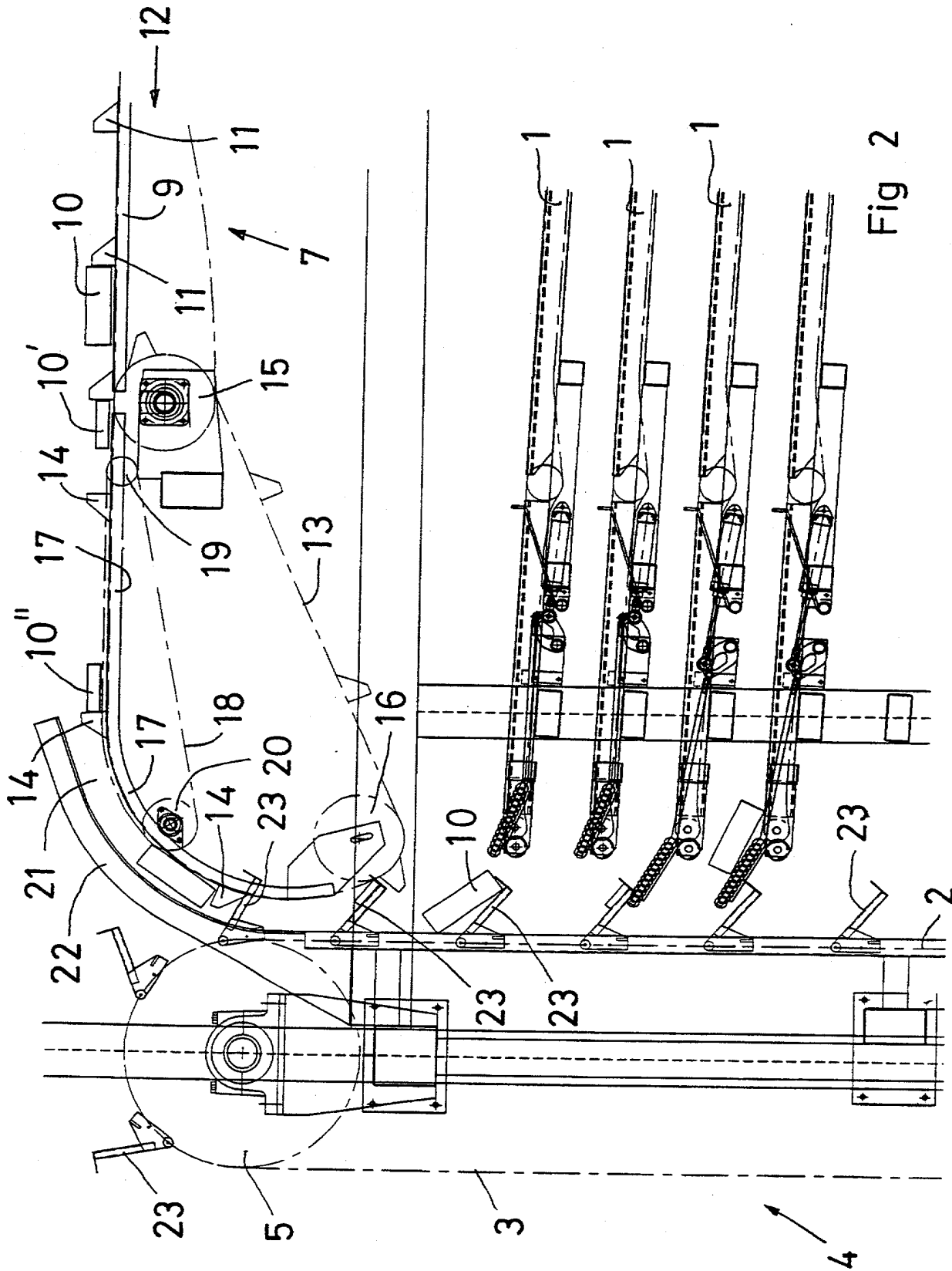


Fig 2

Declaration and Power of Attorney United States Patent Application

Patents and Design Patents
Sole & Joint Inventors
Convention & Non-convention
PCT & Non-PCT
This form cannot be amended, altered
or changed after it is signed.
(For use only for inventors who
understand the English language.)

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled Feeding arrangement for individual feeding of timber pieces

(check one) ☐ is attached hereto.

☐ was filed as U.S. Application No. _____ on _____ and (if applicable) was amended on _____

☒ was filed as PCT International Application No. SE00/01751 on 11 September 2000 and (if applicable) was amended under PCT Article 19 on _____

(I authorize any attorney appointed below to insert information in the preceding blanks.)

I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119(a)-(d) or §365(b) of any foreign and PCT application(s) for patent or inventor's certificate, or §365(a) of any PCT international application which designated at least one country other than the United States of America listed in this Declaration. I have also identified below any foreign application for patent or inventor's certificate or PCT international application having a filing date before that of the application(s) on which priority is claimed:

Foreign/PCT Application No.	Country	Filing Date	Priority Claimed? (yes/no)
9903274-0	Sweden	15 September 1999	Yes

I hereby claim the benefit under Title 35, United States Code, §120 or §365(c) of any United States application and PCT international application designating the United States of America listed in this Declaration and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application or PCT international application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

U.S. Application No.	Filing Date	Status (patented/pending/abandoned?)

I hereby claim priority benefits under Title 35 United States Code §119(e) of any U.S. provisional application(s) listed below:

U.S. Provisional Application No.	Filing Date

I hereby appoint the following attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: Steven W. Collier (42429), Joseph A. DeGrandi (17446), Thomas L. Evans (35805), Carolyn A. Favorito (39183), Herbert M. Hanegan (25682), J. Rogers Lumsford, III (29405), Michael A. Makuch (32263), William F. Rauchholz (34701), Dennis C. Rodgers (32936), Charles L. Warner, II (32320), Robert G. Weilacher (20531), Richard G. Young (20628).

Send all correspondence to: Smith, Gambrell & Russell, LLP, Beveridge, DeGrandi, Weilacher & Young Intellectual Property Group, 1850 M Street, N.W. (Suite 300), Washington, D.C. 20036. All facsimiles may be sent to (202) 659-1462. Direct all phone calls to (202) 659-3811.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor: Corneth Gunnarsson

Citizenship: Swedish

Residence (city, state, country):

Värmdö, SE-340 30 Vislanda, Sweden

Post office address:

Signature: [Signature]

Date: 2002-03-12

Full name of second joint inventor, if any:

Citizenship:

Residence (city, state, country):

Post office address:

Signature: _____

Date: _____

Additional inventors and/or prior applications are listed in attached Supplemental Sheet(s).

SGR/BDWY 199

BDW Form SED-2
Small Entity
Small Business Concern

Applicant or Patentee: (inventors)
Serial or Patent No.: (if known) _____ Filed or Issued: (if known) _____
For: (invention title) Feeding arrangement for individual feeding of timber pieces.

Any. Dkt. No.: _____

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY
STATUS (37 CFR 1.9(f) AND 1.27(c)) - SMALL BUSINESS CONCERN**

I hereby declare that I am: (check one)

- ☐ the owner of the small business concern identified below:
☒ an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF CONCERN C. Gunnarssons Verkstads AB
ADDRESS OF CONCERN Olvågen, SE-240 30 Vislanda, Sweden

I hereby declare that the above-identified small business concern qualifies as a small business concern as defined in 13 CFR 121.3-18, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the above-identified invention described in

- (check one) ☐ the specification filed herewith
☐ application serial no. _____, filed _____
☐ patent no. _____, issued _____

If the rights held by the above-identified small business concern are not exclusive, each individual, concern or organization having rights to the invention is listed below and no rights to the invention are held by any person, other than the inventor, who could not qualify as an independent inventor under 37 CFR 1.9(c) or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

NAME _____	<input type="checkbox"/> INDIVIDUAL	<input type="checkbox"/> SMALL BUSINESS CONCERN	<input type="checkbox"/> NONPROFIT ORGANIZATION
ADDRESS _____			
NAME _____	<input type="checkbox"/> INDIVIDUAL	<input type="checkbox"/> SMALL BUSINESS CONCERN	<input type="checkbox"/> NONPROFIT ORGANIZATION
ADDRESS _____			

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING Corneth Gunnarsson
TITLE OF PERSON OTHER THAN OWNER _____
ADDRESS OF PERSON SIGNING Växjövägen, SE-240 30 Vislanda, Sweden

SIGNATURE _____

DATE 2002-03-12